Application No.: 09/761,983 Docket No.: M0289.0162/P162

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 7, 11, 13 and 17 as follows:

- 1. (Currently Amended) A timeslot assignment method for a communication system in which a plurality of end-user systems are connected to a timeslot assignment unit via a common transmission medium, each of said end-user systems comprising a buffer for storing packets of either variable or constant length- and forwarding packets from said buffer on assigned timeslots, the method comprising the steps of:
- a) determining a first count number of said packets in the buffer of each of said end-user systems;
- b) determining a second, total count number of timeslots previously assigned to each end-user system during a delay time period of said timeslot assignment unit;
- c) using said first and second count numbers for determining a third count number of packets in said buffer to which timeslots are still not assigned; and
- d) assigning timeslots to packets of each end-user system based on an order of rank of [[said]] third count number numbers of respective ones of said plurality of end-user systems.
- 2. (Original) A timeslot assignment method as claimed in claim 1, wherein said third count number equals a difference between said first and second count numbers.
- 3. (Original) A timeslot assignment method as claimed in claim 1, wherein the step (d) assigns said timeslots on a round-robin basis.

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4. (Original) A timeslot assignment method as claimed in claim 1, wherein the step (d) assigns said timeslots in proportion to said third count number.

- 5. (Original) A timeslot assignment method as claimed in claim 1, wherein the step (d) comprises the steps of:
- d₁) arranging the third count numbers of said end-user systems in descending order of rank;
 - d₂) setting integer N to one;
- d_3) detecting a difference between the third count number arranged in a rank represented by the integer N and the third count number arranged in a rank represented by integer (N+1);
- d₄) assigning timeslots corresponding in number to said difference to packets of N end-user systems whose third count numbers are arranged in said descending order; and
 - d_5) incrementing the integer N by one and repeating the steps (d_3) and (d_4) .
- 6. (Original) A timeslot assignment method as claimed in claim 1, wherein said packets are ATM cells.

- 7. (Currently Amended) A communication system comprising:
- a plurality of end-user systems; and
- a timeslot assignment unit connected via a common transmission medium to said end-user systems,

each of said end-user systems comprising:

- a buffer for storing packets of either variable or constant length;
- a queue length detector for detecting a queue length indicating a count number of said packets in the buffer; and
- a controller for forwarding packets from said buffer on timeslots assigned by said timeslot assignment unit and transmitting a signal to said timeslot assignment unit for indicating the detected queue length,

said timeslot assignment unit comprising:

a timeslot count table having a plurality of entries corresponding to said enduser systems, each of the entries having a length corresponding to a delay time period of said timeslot assignment unit for storing a plurality of count numbers of assigned timeslots; and

a controller for (a) determining a total value of count numbers stored in each entry of said timeslot count table, (b) receiving the queue length indicating signal from each of said end-user systems, (c) using said total count number and the received queue length for determining a virtual queue length of each end-user system indicating a count number of packets in said buffer to which timeslots are still not assigned, (d) assigning timeslots to each end-user system based on [[said]] an order of rank of virtual queue length lengths of respective ones of said plurality of end-user systems, and (e) storing a count number of the

assigned timeslots in an entry of said timeslot count table corresponding to said each end-user system.

- 8. (Original) A communication system as claimed in claim 7, wherein said virtual queue length equals a difference between said total count number and the received queue length.
- 9. (Original) A communication system as claimed in claim 7, wherein the timeslot assignment unit assigns said timeslots on a round-robin basis.
- 10. (Original) A communication system as claimed in claim 7, wherein the timeslot assignment unit assigns aid timeslots in proportion to said virtual queue length.
- 11. (Currently Amended) A communication system as claimed in claim 7, wherein the timeslot assignment unit performs the functions of:

arranging the third count numbers virtual queue lengths of said end-user systems in descending order of rank, setting integer N to one;

detecting a difference between the third count number virtual queue length arranged in a rank represented by the integer N and third count number virtual queue length arranged in a rank represented by integer (N+1);

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assigning timeslots corresponding in number to said difference to packets of N enduser systems whose third count numbers virtual queue lengths are arranged in said descending order; and

incrementing the integer N by one and repeating the functions of detecting said difference and assigning said timeslots.

- 12. (Original) A communication system as claimed in claim 7, wherein said packets are ATM cells.
 - 13. (Currently Amended) A communication system comprising:
 - a plurality of end-user systems; and
- a timeslot assignment unit connected via a common transmission medium to said end-user systems,

each of said end-user systems comprising:

- a buffer for storing packets of either variable or constant length;
- a queue length detector for detecting a queue length indicating a count number of said packets in the buffer;
- a memory having a length corresponding to a delay time of said timeslot assignment unit for storing a plurality of count numbers of assigned timeslots; and
- a controller for forwarding packets from said buffer on timeslots assigned by said timeslot assignment unit, determining a total value of the count numbers stored in said

memory, determining, from said total value and said queue length, a virtual queue length indicating a count number of packets in said buffer to which timeslots are still not assigned, and transmitting a signal to said timeslot assignment unit for indicating the virtual queue length,

said transmission assignment unit receiving the virtual queue length indicating signal from each of said end-user systems and assigning timeslots to each end-user system based on [[the]] an order of rank of received virtual queue length lengths of respective ones of said plurality of end-user systems.

- 14. (Original) A communication system as claimed in claim 13, wherein said virtual queue length equals a difference between said queue length and said total value.
- 15. (Original) A communication system as claimed in claim 13, wherein the timeslot assignment unit assigns said timeslots on a round-robin basis.
- 16. (Original) A communication system as claimed in claim 13, wherein the timeslot assignment unit assigns said timeslots in proportion to said virtual queue length.
- 17. (Currently Amended) A communication system as claimed in claim 13, wherein the timeslot assignment unit performs the functions of:

arranging the third count numbers virtual queue lengths of said end-user systems in descending order of rank, setting integer N to one;

detecting a difference between the third count number virtual queue length arranged in a rank represented by the integer N and the third count number virtual queue length arranged in a rank represented by integer (N+1);

assigning timeslots corresponding in number to said difference to packets of N enduser systems whose third count numbers virtual queue lengths are arranged in said descending order; and

incrementing the integer N by one and repeating the functions of detecting said difference and assigning said timeslots.

18. (Original) A communication system as claimed in claim 13, wherein said timeslot assignment unit comprises:

a first controller for transmitting a signal to each of said end-user systems for indicating a count number of said assigned timeslots for storing the count number into the memory of each end-user system; and

a second controller for transmitting a position signal representing timeslot positions of the timeslots assigned by the first controller to each of said end-user systems.

19. (Original) A communication system as claimed in claim 13, wherein said packets are ATM cells.